CLAIMS

1. Voltage shift control circuit intended to be placed in parallel with at least one voltage shift capacitor (Ca) coupling the phase comparator (10) and the voltage controlled oscillator (30) of a phase
5   locked loop, and comprising:
    - an input (21), intended to be coupled with the output of the phase comparator;
    - an output (22), intended to be coupled with the input of the voltage controlled oscillator;
10   - controlled charging means (51), designed to charge the voltage shift capacitor according to a control signal;
    - controlled pre-charging means (52), designed to accelerate the charging of the voltage shift capacitor
15   by the controlled charging means; and
    - controlled polarization means (53), designed to ensure the polarization of the input during the pre-charging of the voltage shift capacitor.

2. Circuit according to Claim 1, characterized in
20   that the controlled charging means comprise a first operational amplifier (OAT1) connected as a voltage follower between the input and the output, a resistor (Ra) placed in the feedback loop of the operational amplifier, and a controlled current source supplying a
25   current (Ia) of specified value through said resistor.

3. Circuit according to Claim 2, wherein the operational amplifier of the charging means comprise a push-pull output stage (P1-P2), and wherein the charging means further comprise a resistor (Rb) of high
30   value connected in series between the output of the operational amplifier and the output of the circuit.

4. Circuit according to Claim 3, wherein the controlled pre-charging means comprise a push-pull stage (P3-P4) which, in the activation of the
35 pre-charging means configuration, is arranged as a

mirror with respect to the push-pull output stage of the operational amplifier of the charging means, in such a way as to short-circuit the high value resistor.

5. Circuit according to Claim 4, wherein the push-pull stage of the pre-charging means is designed to deliver a current higher than the current delivered by the push-pull output stage of the operational amplifier of the charging means.

6. Circuit according to any one of the preceding claims, wherein the controlled polarization means comprise a second operational amplifier (OTA2) connected as a voltage follower which, in the activation of the controlled polarization means configuration, is arranged to impose a common mode voltage on the input of the circuit.

7. Circuit according to any one of the preceding claims, further comprising means (54) for deactivating the controlled pre-charging means before the controlled polarization means.

8. Circuit according to any one of Claims 2 to 7, further comprising an additional controlled push-pull stage (P5-P6) whose output is intended to be connected to the centre point of an RC network of a loop filter of the PLL and which, in the activation configuration, is connected as a mirror with respect to the push-pull stage of the controlled pre-charging means and with respect to the push-pull output stage of the operational amplifier of the charging means.

9. Circuit according to Claim 8, wherein the additional controlled push-pull stage is integrated with the operational amplifier of the charging means.

10. Circuit according to any one of the preceding claims, designed in CMOS technology.

11. Phase locked loop comprising a phase or frequency comparator (10), a loop filter (20), a voltage controlled oscillator (30), a voltage shift capacitor (Ca) connecting the phase comparator and the voltage controlled oscillator, and a voltage shift

control circuit according to any one of the preceding claims placed in parallel with the voltage shift capacitor.

12. Radio-frequency transmitter, comprising a phase locked loop according to Claim 11 for generating a radio-frequency signal to be transmitted.

13. Mobile terminal of a radio-communications system comprising a radio-frequency transmitter according to Claim 12.

14. Base station of a radio-communications system comprising a radio-frequency transmitter according to Claim 12.